

The background image is a photograph of a solar farm in a desert. Rows of solar panels are laid out on the ground, receding into the distance. A woman wearing a long yellow dress is standing on the right side of the frame, looking towards the solar panels. In the background, there are some green bushes and a large, rounded hill under a clear sky.

# JKO POLICY BRIEF

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## Identity Crisis? Voluntary Carbon Crediting and the Paris Agreement

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# **Identity Crisis?**

## **Voluntary Carbon Crediting and the Paris Agreement**

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# Summary

The advent of the Paris Agreement is both a chance as well as a challenge for international carbon markets. It is a chance because it has opened a window of opportunity for the development of new market-based instruments as well as providing a framework for the incorporation of national and regional carbon crediting schemes that have been developed outside the margins of the UNFCCC in recent years. It is a challenge because its architecture fundamentally differs from the Kyoto Protocol and the architecture of the latter has defined the international context in which all existing instruments have emerged. The main difference is the disappearance of the clear differentiation between developing and developed countries. Under the Kyoto Protocol, only the developed countries faced formal mitigation obligations. Under the Paris Agreement, now all countries are obliged to develop and communicate nationally determined contributions, but there is no obligation to actually achieve the set goals.

This Policy Brief sets out to investigate the nature of the challenge for one specific segment of the global carbon market: the voluntary carbon market. In a first step, the container term “voluntary carbon market” is broken down. In fact, the clear cut distinction between voluntary market and compliance market does not longer hold. Instead we suggest to differentiate on the supply side between certification schemes with or without international oversight. The demand side can be differentiated along two dimen-

sions: (1) voluntary demand vs. demand induced by legal obligations (compliance) and (2) public vs. private demand.

In the subsequent section, the state and play of the voluntary carbon market is sketched out focussing on private certification schemes without international oversight as well as voluntary demand from both public and private buyers. Next, the change in the architecture of the global climate regime outlined above is described in more detail before the implications for the voluntary market (again focus on supply without oversight for voluntary buyers) are identified.

We find that the voluntary market must prepare to become part of the Paris architecture if wants to remain credible. Voluntary certification schemes will have to make sure that Parties report on the certificates transferred or set up an international registry that allows to track these transfers. Alternatively, suppliers of the voluntary markets could shift their business models from providing an offset scheme to a labelling scheme in which high-quality mitigation activities are certified including a quantification of the achieved emission reductions, but these could not be used to consolidate the emissions account of whoever purchases the certificates.

All things considered, the new horizon of international climate policy under the Paris Agreement imposes a serious identity crisis for the voluntary carbon market.

# 1 Introduction

Human-made climate change is accelerating. 2015 was the hottest year on record with global mean temperatures around 1 °C above pre-industrial levels. Thus far, 2016 was even hotter, breaking each and every monthly record. In fact, August 2016 was the 15<sup>th</sup> subsequent record breaking month (NOAA, 2016).

Fortunately, 2015 was also ground-breaking in terms of the political response to this development. In Paris, the states of the world finally agreed to a new and comprehensive climate change agreement. The Paris Agreement to the United Nations Framework Convention on Climate Change (UNFCCC) establishes a new universal legal framework and obligates all countries to develop and communicate so-called Nationally Determined Contributions (NDCs) in which they formulate their climate change mitigation and adaptation goals as well as indicate policies and measures to attain them.

The Paris Agreement is the result of a long and intensive negotiation process. At the annual Conference of the Parties (COP) in Bali, 2007, Parties had agreed to negotiate a new climate change agreement to complement (or succeed) the Kyoto Protocol. (In)famously, the first attempt to seal such an agreement failed disastrously in Copenhagen 2009 (Grubb, 2010).

While progress on the multilateral negotiation process was painstakingly slow, carbon pricing initiatives mushroomed all over the planet (World Bank, 2016). Private actors played a key role in this development including by increasingly reverting to voluntary carbon credit schemes to compensate their emissions.

This ecosystem of voluntary carbon trading emerged in the legal environment of the Kyoto Protocol, in which developed countries face quantified emission limitation and reduction

obligations (QELROs) while developing countries not listed in Annex I of the UNFCCC have no such obligations. The legal structure now promulgated in the Paris Agreement is fundamentally different: it is universal as it formulates obligations for all states to reduce emissions, yet the attainment of the pledged contributions is not compulsory. This is a challenge also to the voluntary carbon market as it has to rethink its role and its interdependence with the formal climate change mitigation efforts of national governments, including the questions if and how voluntary activities are reported.

This Policy Brief outlines this challenge in some detail. Section 2 provides a brief introduction to the voluntary carbon market, its status, and recent developments. Section 3 juxtaposes the architecture of the Paris Agreement to its predecessor, the Kyoto Protocol, in order to identify the specific challenges for voluntary carbon trading. Section 4 identifies potential avenues to address these challenges (at least some of them) and section 5 concludes.



# 2 The Voluntary Carbon Market – An Overview

## 2.1 A Fragmented Global Carbon Market

Before going into the details of the voluntary carbon markets it is worthwhile to clarify what the “voluntary carbon market” actually is and how it has co-evolved with so-called “compliance markets”.

Originally, the voluntary carbon market was commonly defined in contrast to the compliance market: the voluntary market, without any international oversight, consists of privately organized carbon crediting schemes who supply mitigation units to private buyers – corporations or individuals – that want to compensate their carbon footprint for ethical reasons or reasons of corporate social responsibility, whereas on the compliance market supply was generated by international mechanisms (CDM and JI) and demand was driven by national mitigation obligations under the Kyoto Protocol or, as a derivative thereof, by private corporations regulated under the EU ETS. In recent years, though, the global carbon market has seen considerable fragmentation. The black and white definition of voluntary vs. compliance carbon market is no longer meaningful as various shades of grey have emerged. For example:

- nation states have bought carbon units above and beyond their Kyoto obligations;
- carbon crediting schemes are being used to disperse international climate finance
- carbon units issued by the VCS and other privately organized schemes have been proposed to be eligible under the Interna-

tional Civil Aviation’s (ICAO) upcoming mandatory offset scheme.

In this section we thus try to capture the full spectrum of the global carbon market and introduce categories that help to describe the various segments of the market more accurately than the binary distinction of voluntary vs. compliance markets (see also figure 1 below).

### 2.1.1 Supply Side

On the supply side, it is not very helpful to distinguish between voluntary and compliance standards. Instead, we propose to separate carbon standards with and without international oversight and certification standards with international oversight continues. Traditionally, the former served voluntary demand while the latter served primarily demand from entities with legal obligations under the Kyoto Protocol or dependent emissions trading schemes. Meanwhile, supply without international oversight includes both privately organized as well as state-run schemes. The privately organized standards include the Verified Carbon Standard (VCS), the Gold Standard, the Climate Action Reserve, the American Carbon Registry and Plan Vivo. More recently, the Japanese government has begun to develop its own crediting mechanism, the Joint Crediting Mechanism, which it also intends to use under the Paris Agreement. Another example for a state-run or at least publicly initiated scheme is the Australian Carbon Offset Standard.



Supply		Demand	
Mechanisms with international oversight		Public	Private
<ul style="list-style-type: none"> <li>Clean Development Mechanism</li> <li>Joint Implementation</li> <li>International Emissions Trading under Article 17 Kyoto Protocol</li> <li>Mechanism under Article 6.4, Paris Agreement</li> </ul>		<b>Compliance</b> Countries with quantified emission limitation and reduction obligations under the Kyoto Protocol Countries with legally binding contributions under the Paris Agreement	Entities under national/regional emissions trading schemes (incl. EU ETS) Aviation sector under a prospective global market based mechanism (GMBM) under ICAO
Mechanisms without international oversight		Public	Private
<ul style="list-style-type: none"> <li>VCS</li> <li>Gold Standard</li> <li>Climate Action Reserve?</li> <li>American Carbon Registry?</li> <li>Plan Vivo</li> <li>Japanese Joint Crediting Mechanism (JCM)</li> <li>Cooperative Approaches under Article 6.2, Paris Agreement</li> </ul>		<b>Voluntary</b> Countries without legally binding contributions under the Paris Agreement Countries buying and retiring carbon credits beyond their obligation.	Companies buying credits for reasons of corporate social responsibility Individuals or companies compensating for example air travel or events.

**Figure 1:** Categorization of the segments of international carbon markets. *Source: Wuppertal Institute.*

The only project-based mechanisms with international oversight are the flexible mechanisms of the Kyoto Protocol, the Clean Development Mechanism (CDM) and Joint Implementation (JI). They continue to exist, but have recently faced serious issues. Historically, the EU ETS has been the biggest source of demand (see below). However, the demand for Certified Emission Reductions (CERs) from the CDM or Emission Reduction Units (ERUs) from JI collapsed after the economic crisis hit the EU and resulted in a dramatic oversupply of emission allowances in the EU ETS (Bellassen, Stephan, & Leguet, 2012; Hermwille, 2013). Consequently, carbon prices collapsed and also the project pipeline of the two project-based mechanisms came to a virtual standstill. In fact, some CDM projects reverted to voluntary buyers as a lifeline during these times of market crisis (World Bank, 2016, p. 33).

In the Paris Agreement, a new mechanism was defined. Article 6.4 establishes a mechanism “to contribute to the mitigation of greenhouse gas emissions and support sustainable development” (UNFCCC, 2016, Art. 6.4). A work programme has been devised to develop modalities and procedures for this mechanism. Once operational, this new mechanism will, like the

CDM, work under the oversight of an international governance body.

Somewhat on the borderline between the two sources of supply fall any potential “cooperative approaches” under Article 6.2 of the Paris Agreement. This article allows countries to directly cooperate. Formal international oversight in terms of common rules, modalities and procedures will not be established. Yet a work programme to develop “guidance” was initiated under the UNFCCC’s Subsidiary Body for Scientific and Technological Advice (SBSTA) will be provided.

### 2.1.2 Demand Side

On the demand side, the situation is even more complex. The sources of demand can be categorised along at least two dimensions. (1) Buyers can be private corporations or individuals or they can be public, i.e. national governments. And (2) buyers can use carbon credits in order to fulfil legal obligations (compliance) or voluntarily.

Legal obligations for national governments can originate from international agreements, the Kyoto Protocol and to some extent the Paris Agreement (see discussion in section 3 below).

For the private sector these obligations originate from national (or regional) legislation. For example, companies from the European power sector and most heavy industries are obliged under the EU ETS to surrender one emission allowance for every tonne of CO<sub>2</sub> they emit. International credits such as ERUs and CERs can be used to substitute such allowances (at least to some extent). Another option is the use of (international) carbon credits under carbon tax schemes. In some countries, companies pay a fixed tax rate on every tonne emitted. In some cases, carbon credits can be used to reduce the tax burden.

Another potential source of demand for international carbon credits is the international aviation sector. To date, the aviation industry is one of the largest sources of voluntary demand. Service providers such as atmosfair, myclimate, and others offer easily accessible compensation of air travel emissions for individual and corporate customers. However, offsetting of emissions will become mandatory in the future. Already in 2010 the ICAO has agreed to limit the growth of net emissions from 2020 onwards. A Carbon 'Offsetting and Reduction Scheme for International Aviation (CORSIA)' has been created to support this goal (ICAO, 2016; see also Hermwille, 2016). It is still unclear which types of carbon credits will be eligible under the scheme, though. In the past, the aviation industry had strongly lobbied to include all sorts of credits including those from certification standards without international oversight (Hermwille, 2016).

For private buyers, purchasing carbon credits without any formal obligations would typically mean that they intend to compensate their own emissions for ethical or corporate social responsibility reasons. Furthermore, pre-compliance demand plays a supporting role in many of the voluntary transactions. Here private actors anticipating future regulation buy credits to compensate part of their emissions

(Hamrick & Goldstein, 2016). With the dynamic and open-ended structure of the Paris Agreement and its 5-yearly contribution cycles (see below), this becomes even more critical, as the voluntary demand of today may well become mandatory in subsequent NDC cycles.

Last but not least, national governments can voluntarily buy credits to support mitigation activities beyond their formal obligations or as a tool for results-based finance in the context of development assistance or international climate finance (see table 1, below).

This discussion shows that the binary distinction between voluntary and compliance markets is an anachronism. However, most of the literature still uses this taxonomy. This is particularly the case for two flagship reports that are the basis for the subsequent analysis: the "State of the Voluntary Carbon Markets 2016" (Hamrick & Goldstein, 2016) and the "State and Trends of Global Carbon Pricing" (World Bank, 2016). In the remainder of the Policy Brief, when we speak of voluntary markets, we will focus on the supply side, more specifically on private certification standards without international oversight.

Programme	Description
<b>Carbon Neutral Business Trips of the German Federal Government</b>	<p>The German Federal Government in 2015 has decided to offset the climate impact of its employee's airborne and road business trips. To date, emissions to the amount of 138,038 tonnes of CO<sub>2</sub>e have been compensated using credits from the CDM. The German government decided to support CDM projects that will help to advance reform efforts under the scheme. To date, it has purchased CERs from five projects: one project on electricity generation from landfill gas in Mexico, a wind power project in Costa Rica, a project for electricity generation from crop residues in India, and two household biogas projects in Nepal and China.</p> <p>The scheme is purely voluntary in nature and the cancelled credits are not counted towards Germany's mitigation obligations under the Kyoto Protocol or elsewhere.</p>
<b>Pilot Auctioning Facility for Methane and Climate Change Mitigation (PAF)</b>	<p>The World Bank's Pilot Auction Facility for Methane and Climate Change Mitigation (PAF) was launched in 2013. The PAF uses an innovative approach of buying CERs (or other types of independently verified emission reductions) from methane projects at guaranteed prices by offering put options at competitive auctions. Having obtained a put, the successful bidder then has the right to sell their certificates to the PAF at the price set by the auction. The first auction was held in July 2015, with puts worth some 8.7 million CERs being issued at a price of USD 2.40 per CER. The second round of auctions allocated USD 20 Million to 5.7 million CERs.</p> <p>The PAF was set up to disburse a total of USD 100 million in climate finance. In a first round Germany, Sweden, Switzerland, and the United States have contributed a total of USD 53 million already. By adopting this innovative financing approach, the World Bank hopes to provide assistance for a vast number of projects and mobilise efforts for continued abatement of methane.</p>
<b>Carbon Initiative for Development (Ci-DEV)</b>	<p>The Carbon Initiative for Development (Ci-Dev) was launched in December 2011. Its aim is to build capacity and develop tools and methodologies for leveraging climate finance in the world's poorest countries primarily with a view to establishing energy access projects.</p> <p>Ci-Dev utilizes the CDM toolbox, i.e. its methodologies and the verification process, as a means to provide performance-based payments for development projects. The initiative incentivizes the development of standardized sectoral baselines and the establishment of accounting standards for "suppressed demand". In very deprived and marginalized situations people often lack the economic ability to satisfy very basic human needs. The concept of suppressed demand takes this into account and allows to use carbon finance to help achieve a minimum service level for lighting, cooking or other types of basic demands.</p>

**Table 1:** Three examples for voluntary demand from the public sector, i.e. demand that exceeds national mitigation obligations under international law.

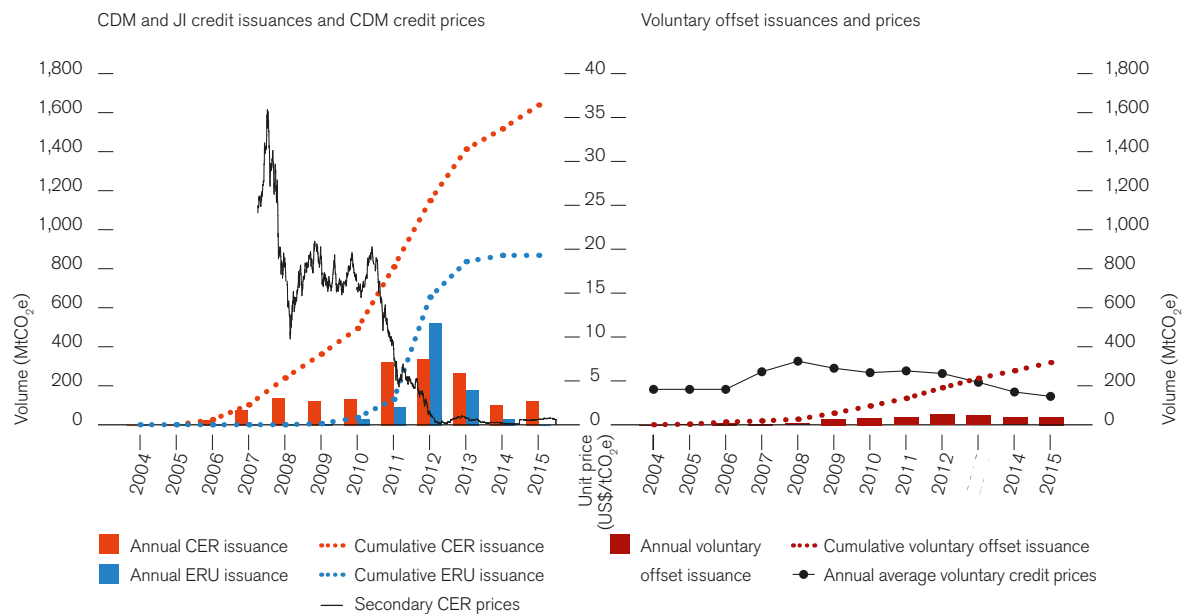
## 2.2 Status of Voluntary Carbon Supply

Historically, the market for carbon units under international standards (CDM & JI) has dwarfed the voluntary carbon markets (supplied by private standards) (see figure 2, below). Only in recent years, after CER prices collapsed, has voluntary supply gained shares.

In 2015, a total 84.1 million tonnes of CO<sub>2</sub>e were bought for voluntary purposes on international markets. This is an increase of 10 per cent

against 2014 levels. However, due to falling average prices, the total market value fell by 7 per cent to USD 278 million. A total of carbon credits to the amount of 42 million tonnes of CO<sub>2</sub>e were issued in 2015 and 39.5 million credits were retired. Cumulatively, privately organized carbon schemes have credited emission reductions of 329.8 million tonnes CO<sub>2</sub>e, nearly half of which have been retired (Hamrick & Goldstein, 2016).

The lion's share of these emission reductions has been certified by the California based Verified Carbon Standard (VCS) who accounted for nearly half of those credits contracted in 2015.



**Figure 2:** Annual and cumulative CER and ERU issuance, secondary CER prices (left), and voluntary offset issuance and prices (right). *Source: World Bank (2016).*

Next in line are the Climate Action Reserve (CAR) and the Gold Standard both with ~20 per cent of the market. The American Carbon Registry (ACR) accounts for 5.6 per cent. The smallest certification scheme in terms of contracted emission reductions is Plan Vivo (below 2 per cent) (see figure 3).

Due to the extremely low demand for CERs for compliance, the UNFCCC Secretariat has set up a platform for voluntary cancellation of credits from the CDM. The “Climate Neutral Now” initiative was launched in September 2015. The turnout has been, however, relatively low so far. Less than one per cent of total cancellations of CERs were made through this voluntary scheme (World Bank, 2016). Compared to the private certification standards, this voluntary use of the CDM is miniscule, a mere 1.9 per cent of all transactions on the voluntary market (Hamrick & Goldstein, 2016).

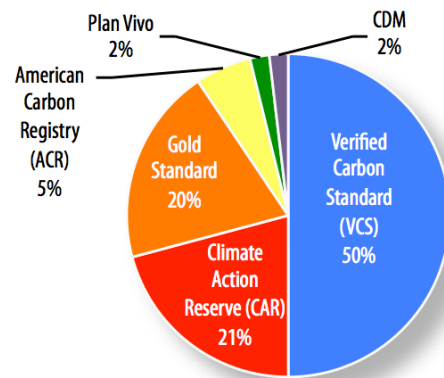
With respect to the types of mitigation activities that are certified, the majority of the projects are wind power projects, followed by projects to reduce emissions from deforestation and forest degradation (REDD+), and methane

emissions from waste treatment in landfills. Collectively these three project types account for more than two thirds of the total transacted volume in 2015 (see figure 4). Worth mentioning are also clean cookstove projects. Although they account only for slightly below 7 per cent of the traded credit volume, due to higher average prices, their market value sums up to nearly 10 per cent of the total (Hamrick & Goldstein, 2016).

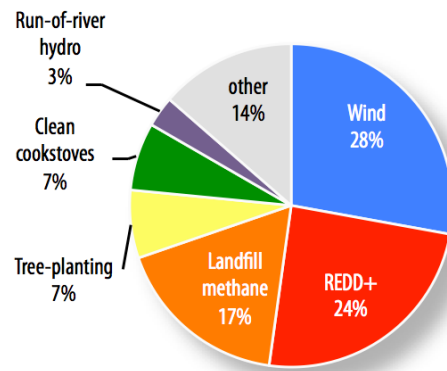
In terms of the regional distribution, the majority of the traded in 2015 originated from countries without formal national climate change mitigation obligation (see figure 5). However, the distribution is very different from the regional distribution of the Kyoto Protocol’s mechanisms, CDM and JI. By far the largest share of traded credits originated from the United States. The US is not eligible under the CDM or JI, so voluntary certification schemes are the only opportunity available. Also, China, which hosts the lion’s share of CDM projects, ranks only eighth in voluntary supply and accounts for below 5 per cent of the units traded in 2015. Somewhat surprising may also be that Germany, a country that has a formal emission

reduction obligation under the Kyoto Protocol, features in the top 10 of the host countries. 3.7 per cent of all contracted voluntary credits originated there.

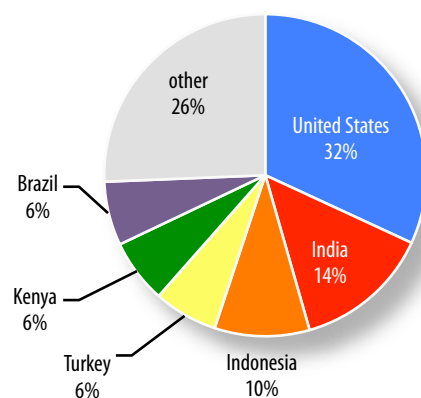
Although the voluntary supply has steadily grown over the last years, market outlooks are not particularly bright. Hamrick and Goldstein (2016) estimate that a total of nearly 56 million carbon credits remain unsold in the portfolios of project developers and this surplus of supply is expected to grow even further. Unless new sources of demand are found, the prices on the voluntary markets are therefore bound to fall even further.



**Figure 3:** Share of contracted voluntary carbon credits by certification standard. *Source: Wuppertal Institute based on Hamrick and Goldstein (2016).*



**Figure 4:** Share of contracted voluntary carbon credits by project type. *Source: Wuppertal Institute based on Hamrick and Goldstein (2016).*



**Figure 5:** Share of contracted voluntary carbon credits by host country. *Source: Wuppertal Institute based on Hamrick and Goldstein (2016).*

# 3 Challenges for Voluntary Standards après Paris

## 3.1 The Architecture of the Paris Agreement vs. the Kyoto Protocol

In December 2015, the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) adopted a new and encompassing climate change treaty: the Paris Agreement. For the first time, this Agreement obligates all countries to act on human-made climate change. All signatories must develop and communicate so-called Nationally Determined Contributions (NDCs) in which they set themselves climate change mitigation and adaptation goals and/or collate policies and measures intended to achieve these goals.

In this, the Paris Agreement fundamentally differs from the Kyoto Protocol. (1) the climate change commitments are not negotiated and agreed upon at the international level, but independently in the national capitals. And (2) under the Paris Agreement all Parties are to adopt national mitigation targets. The Kyoto Protocol, by contrast, formulated so-called “quantified emission limitation and reduction obligations” (QELROs) only for developed countries included in the UNFCCCs Annex I. Developing countries (Non-Annex I) did not take on commitments above and beyond the very generic duties specified in Article 4 of the original Framework Convention on Climate Change (United Nations, 1992).

The architecture of the Kyoto Protocol is therefore characterized by a “capped” and an “uncapped” environment. The former comprises all

Annex I countries. Their QELROs define a fixed amount of emissions that has been assigned to every country. While the Kyoto Protocol allowed countries with QELROs to trade parts of their assigned amounts, either directly or through Joint Implementation<sup>1</sup> the total emission budget is still capped.

Under the Kyoto Protocol, non-Annex I countries have no obligation to limit their emissions and hence no assigned amount. The CDM allowed to certify mitigation projects in this uncapped environment. For every verified emission reduction of a tonne of CO<sub>2</sub>e, one CER can be issued, transferred to another country and counted towards meeting that party’s QELRO.

The Paris Agreement’s architecture differs fundamentally from this in a number of ways: First, the Paris Agreement does away with the formal and static differentiation between developed and developing countries, between countries with mitigation obligations and countries without such obligations. “As nationally determined contributions to the global response to climate change, all Parties are to undertake and communicate ambitious efforts (...)” (UNFCCC, 2016, Art. 3). In fact overcoming the deeply entrenched chasm between developed and developing countries was key to the successful

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<sup>1</sup> Joint Implementation is one of the two project-based mechanisms of the Kyoto Protocol. Mitigation projects in Annex I projects can be registered and issued Emission Reduction Units (ERUs) for every abated tonne of CO<sub>2</sub>e emission. The ERUs are subtracted from the projects’ host country’s assigned amount and can be transferred to another countries to increase the importer’s assigned amount.



adoption of the Paris Agreement (cf. Obergassel et al., 2015).

Second, the legal character of the national climate goals differs between the two treaties. The Kyoto Protocol's QELROs oblige those states to actually achieve the set mitigation goals. Contrastingly, the Paris Agreement does not promulgate such obligations with respect to the mitigation goals set out in the NDCs. Instead, it establishes a compulsory political process of formulating NDCs, implementing policies to achieve them and subject the progress to international review through an international transparency mechanism (Bodansky, 2016; Obergassel et al., 2015; Rajamani, 2016).

Under the Kyoto Protocol, carbon credits could be “mined” in countries without mitigation obligations. The host countries did not have any interest in attributing the realized emission reductions to their national climate policies and including them in their own GHG inventories. However, they had an interest in attracting investments in low-carbon technologies from industrialized countries. Both the CDM as well as various voluntary carbon standards helped to channel such investments.

This situation has fundamentally changed under the Paris Agreement: former host countries without mitigation commitments now face an obligation to reduce emissions themselves. They therefore have an incentive to keep as many emission reductions as possible in their own books. This is particularly true for low cost emission reduction potentials.

Of course not all countries have formulated their NDCs in terms of absolute GHG emission reductions / limitations or GHG intensity targets. Of 187 countries that have submitted their NDCs<sup>2</sup>, 153 countries have indicated GHG targets. Of the remaining 34, the majority (23) only

formulated actions without quantified targets, 7 combined a quantified non-GHG target with actions and only 4 specify a quantified goal that is not expressed in GHG terms. Also some countries have limited their NDCs to some sectors and excluded others. Roughly one third of the NDCs that specify a GHG target limit this target to a subset of their economy, 12 countries have economy-wide targets excluding only the land use and forestry sector, and 8 countries did not specify the sectoral scope of their target. All major emitters have expressed their climate change mitigation contributions in GHG, the majority with economy-wide scope. The only exemptions are India and China who did not specify the sectoral scope of their targets (WRI, 2016) (see figure 6, next page).

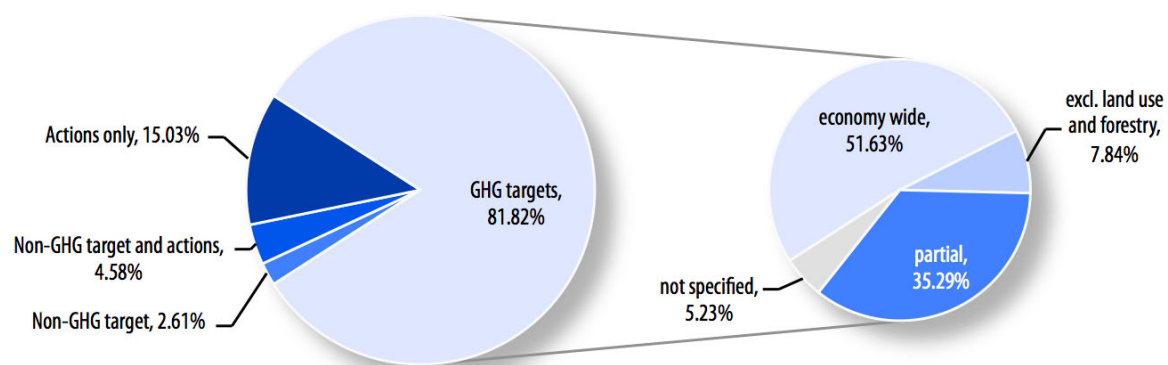
Theoretically, the “mining” of carbon credits could therefore be continued in those sectors that fall outside the scope of what is covered by the NDCs. However, the remaining “mining claim” is much reduced.

### 3.2 Tracking of Units

For the vast majority of mitigation potentials, voluntary carbon standards face a serious challenge. Either they could continue to certify projects without formal acknowledgement and recognition of the host country. Any emission reduction achieved under the scope of a country's NDC would materialize in the host country's GHG inventory, provided the inventory's methodologies are of sufficient accuracy and granularity, and contribute to the attainment of that country's mitigation goal. Therefore, transferring carbon credits from projects without a formal recognition in the host country's GHG balance sheet, would necessarily result in double counting. Emission reductions would be claimed by a private entity that ends up buying the voluntary credits and by the host country of the credited activity.

<sup>2</sup> The EU has submitted a joint NDC for all its member states.





**Figure 6:** Overview of contribution types and sectoral scope of nationally determined contributions (NDCs).  
Source: Wuppertal Institute based on WRI (2016).

One solution would be to devise a system that allows to transparently track and account transferred carbon credits. Under such a registry, it would be theoretically possible to balance the accounts of the host country of the activity and the country of residence of the entity that purchases and ultimately retires the credit. Such a registry would work most effectively and most economically centrally organized and under international oversight. Arguably, it would exceed the capacity of any single (private) certification body to set up such a registry. Having several competing registries would not only duplicate work and add unnecessary costs, it could also erode the credibility of the trading regime as a whole, particularly when competing registries try to attract customers by lowering the stringency of their accounting standards. If such a system will be developed directly under Article 6 of the Paris Agreement, voluntary certification schemes could try to make their credits fungible under the international scheme subjecting themselves to at least some kind of international scrutiny.

Another possibility to track transfers and address double counting would be to require all countries to transparently report on their exported and imported credits, including those of the voluntary carbon market. These reports, which could be submitted together with the

national inventories, would allow to double check all transfers. The costs associated to this solution might be significantly lower than the administrative burden of introducing a registry. However, both solutions will have to be implemented at the international level by ensuring equal conditions for all countries participating in these transfers.

#### Variants of Double Counting

There are several phenomena that may lead to an inaccurate accounting of emission reductions that have been summarized in the container term “double counting” (cf. Schneider, Kollmuss, & Lazarus, 2015).

- Double issuance occurs when more than one carbon unit (e.g. from competing certification schemes) is issued for one and the same emission reduction.
- Double claiming occurs when the host country and the purchasing country both claim the emission reductions and count them towards achieving their mitigation goal.
- Double use occurs when one mitigation outcome is used for mitigation pledge attainment more than once, either by the same Party or by different Parties, for example, because certificates are indistinguishable due to lack of unique serial numbers.
- Double purpose occurs when the mitigation outcome is counted towards a (purchasing) country's mitigation commitment and at the same time the financial flow associated with the project is counted towards the investing country's financial commitment.

### 3.3 Changing Focus

Another potential route for voluntary standards is discussed *inter alia* by the Gold Standard Foundation. One solution would be to shift away from supplying “offsets” to labelling mitigation projects. Currently, the good traded on the voluntary carbon market is expressed in terms of “avoided carbon emissions”. This allows end buyers to settle their own emission accounts, taking the sum of their own internal emissions and emissions avoided externally.

Instead, voluntary standards could take a step back. Instead of certifying emission reductions they could certify the support of a specific mitigation activity. In fact the concept of certified emission reduction in and of itself is a rather abstract one given that it commodifies something that never existed. Changing the focus of what is certified could be a way forward. This would allow to avoid the issue of the attribution of the mitigation outcome to either the purchaser of the certificate or the host country in that the emission reduction occurs. The resulting emission cuts would in any case be attributed to the host country and be rightfully reflected in its GHG inventory. The buyer of the certificate could still claim that she supported a mitigation project that resulted in emission reductions of a quantified amount. The only dif-

ference would be that the buyer has to maintain two separate accounts, its own emissions and emission reductions supported elsewhere. It would not be allowed to consolidate and liquidate both as one account. In practice, this would constitute a shift from a offsetting scheme to a labelling scheme in which there is no common “currency”.

Arguably, though, such a shift of focus would pose a serious communication challenge. For one, it would be relatively easy for entities purchasing such a support certificate to still claim that they have offset their own emissions. It would be relatively easy to make use of these new kind of certificates in a deceptive way, especially if the certification schemes fail to communicate clearly the difference between their old standards and this new standard.

Also, this approach cannot fully exclude double counting. While it avoids the issue of double counting of emission reductions, it may well be the case that industrialized countries appropriate themselves on the financial flows associated with the supported mitigation activities and count them towards their climate finance commitments. Given these uncertainties, it is unclear whether there is actually demand in such rebranded carbon (support) credits.

## 4 Conclusions

In the past, voluntary carbon markets have played a key role in complementing mandatory carbon regulation. This has led to a proliferation of certification standards used by private as well as public actors for different reasons.

This policy brief shed some light on these activities and the rationale of the different actors involved. Furthermore, it highlighted some key challenges the voluntary carbon market is confronted with in the context of the Paris Agreement: the new legal framework introduced with the Paris Agreement which requires climate action to be taken by all parties modifies the way voluntary carbon market activities must be thought of. The possibilities to implement climate activities in areas not covered by climate change regulation are significantly reduced. If the ambition and coverage of NDCs increases as envisaged by the Paris Agreement, continuing to focus on these activities in the uncapped environment is not an option.

Instead, the voluntary standards must prepare to become part of the Paris architecture. The links between voluntary market and international climate change will become much closer. As the example of addressing the issue of double counting shows, the voluntary standards will become much more dependent on the international climate policy landscape: Voluntary certification schemes will have to make sure that Parties report on the certificates transferred or set up an international registry that allows to track these transfers.

As shown, the alternative of certification schemes to change their focus by certifying the promotion of low-carbon development instead of carbon emission reductions will be difficult to communicate and cannot fully address the risk of double counting. If voluntary carbon markets want to remain credible, they will have to address these challenges.

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